PROC. ENTOMOL. SOC. WASH.
96(3), 1994, pp. 417–427

# STUDIES IN NEOTROPICAL *NEOMIDA*: DESCRIPTIONS OF EIGHT NEW SPECIES (COLEOPTERA: TENEBRIONIDAE)

CHARLES A. TRIPLEHORN

Museum of Biological Diversity, The Ohio State University, 1315 Kinnear Road, Columbus, Ohio 43212.

*Abstract.*—The following new species of *Neomida* are described and illustrated: *N. acera* (Panama), *N. deltocera* (Panama), *N. divergicornis* (Mexico), *N. dolichocera* (Costa Rica), *N. heterocera* (Costa Rica), *N. lawrencei* (Costa Rica), *N. paurocera* (El Salvador), and *N. pogonocera* (Panama).

*Key Words:* Darkling beetles, *Neomida* New Species, Tenebrionidae, Fungus–insect relationships, Polyporaceae

Several decades ago, John F. Lawrence began sending me large numbers of specimens of *Neomida* for determination. At about the same time, I borrowed all of the undetermined *Neomida* from the United States National Museum of Natural History, most of which were collected by James Zetek, long-time resident on Barro Colorado Island in the Canal Zone, Panama.

These two collections still represent the most significant ones I have been able to study since there are large series for determining intraspecific variation, there are numerous species represented, and the Lawrence specimens are accompanied by host fungus data.

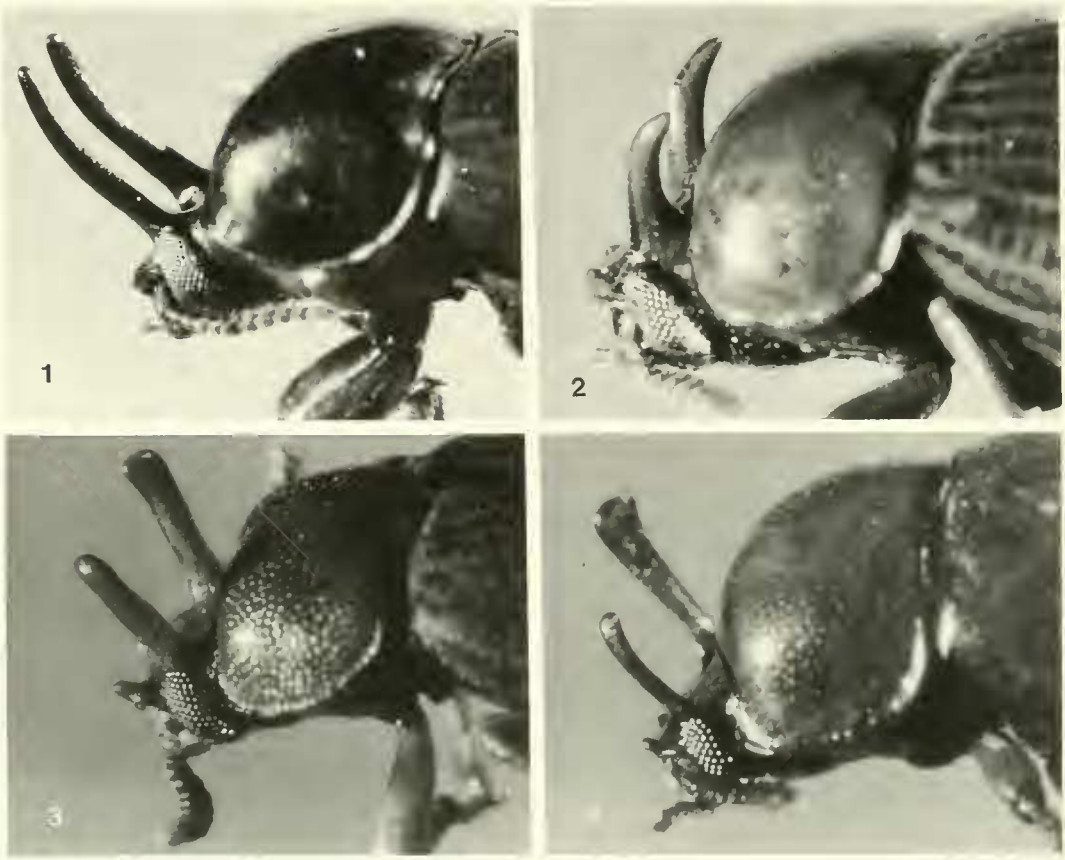
Since my revision of the Diaperini of America north of Mexico (Triplehorn, 1965) in which four species (two described as new) were discussed, I have studied the type specimens of Champion and Bates (British Museum of Natural History, London), and Chevrolat and Pic (Museum National d'Histoire Naturelle, Paris). I have also borrowed smaller lots of specimens from numerous collections visited.

My original intention was to revise *Neomida* for the Western Hemisphere and, while I have made considerable progress, I do not feel confident enough to complete that revision at this time.

In order to provide names to enable Lawrence to complete his work on host fungus–insect relationships, I offer the descriptions of eight new species of *Neomida* as follows:

### *Neomida dolichocera*, NEW SPECIES
Fig. 1

*Holotype,* male: Large, elongate-oval, strongly convex, dark reddish-brown, shining. Head with two long, thin, cylindrical horns between and in contact with inner margins of eyes; horns parallel and slightly curved caudad; vertex flat, smooth, almost impunctate, not differentiated from frons; clypeus slightly convex, smooth, extremely minutely punctulate, two blunt prominences (not distinct tubercles) on anterior margin; clypeal margins continuous with genae which are thickened and slightly reflexed; eyes large, deeply emarginate, with dorsal lobe smaller than ventral lobe; antennae with distal seven segments transverse, forming a stout club, segment four with only anterior portion expanded and part of club; maxillary palpus elongate-oval,




Figs. 1–4. *Neomida* spp., lateral aspect of head. 1, *N. dolichocera*, n. sp., ♂ Holotype (Costa Rica: LaSelva). Length: 7.6 mm. 2, *N. lawrencei*, n. sp., ♂ (Mexico: Oaxaca). Length: 5.8 mm. 3, *N. divergicornis*, n. sp., ♂ (Mexico: Veracruz). Length: 4.4 mm. 4, *N. heterocera*, n. sp., ♂ (Costa Rica: Guanacaste). Length: 4.2 mm.

rounded apically; mentum convex, densely punctured, sparsely setose.

Pronotum strongly transverse and convex, widest about middle, all angles obtusely rounded, anterior margin almost straight, with thick bead, a deep, U-shaped depression on anterior third; basal margin bisinuate, distinctly beaded; surface smooth, uniformly finely but not densely punctate.

Elytra subequal in width to pronotum, lateral margins straight and parallel, surface finely punctate-striate, punctures closely spaced; intervals flat, minutely and sparsely punctate. Ventral surface concolorous with dorsum; flanks of pronotum smooth medially and posteriorly, finely punctate anteriorly and laterally; prosternum finely and closely punctured; prosternal process gradually deflexed behind, its apex not prominent; protibia slightly expanded from base to apex, outer margin strongly toothed, densely clothed anteriomedially with dense pads of golden setae; all tarsi clothed beneath with long, sparse, golden setae; meso- and metasternum finely and sparsely punctate; mesosternum deeply V-shaped anteriorly; metasternum with median incised line deep and extending more than half way from base to anterior margin; abdominal sterna uniformly finely and sparsely punctate except terminal segment which is densely punctate; epipleura abruptly ab-

breviated opposite middle of last visible abdominal segment. Aedeagus as in Fig. 9. Length: 7.6 mm; width: 3.4 mm.

Female unknown.

*Types:* Holotype, male, Costa Rica, Heredia Prov., La Selva Res. Sta. VII-17-1973, J. Doyen & P. A. Opler (CASC); 2 male paratypes, Costa Rica, San Carlos, Schild & Burgdorf (USNM), four male paratypes, Costa Rica, Rio Sn Larencito, Res. For. Sn Ramon, 5 km N Col. Palmarino, Alajuela, 900 m, March 1990 (Inst. de Biodiversidad, Sto. Domingo, C.R.) (John Doyen). Length: 7.4–7.8 mm; width: 3.3–3.8 mm.

*Diagnosis:* this is one of the largest species in the genus with perhaps the longest male frontal horns. The flat, smooth head is also distinctive as is the broad U-shaped depression on the anterior face of the pronotum. The smaller males have horns only about half as long as the other two specimens and the clypeal tubercles are scarcely evident.

*Specimens examined:* Known only from the type series, all males from Costa Rica.

### *Neomida lawrencei*, New Species
Fig. 2

*Holotype,* male: Moderately large, elongate-oval, strongly convex, dark reddish-brown, shining. Head with two thin, slightly recurved horns between and in contact with inner margins of eyes; horns broad basally, tapering gradually to apex, subacute, bowed strongly outward; vertex strongly swollen, finely and densely punctate; frons between horns minutely and sparsely punctulate, a transverse groove extending behind horns and a broad transverse impression in front of horns and just behind clypeus; clypeus feebly convex but abruptly delimited from frons, rectangular, two prominent but blunt tubercles on anterior margin, finely and sparsely punctured; entire head with minute pattern of microreticulations; eyes large with dorsal lobe small between genal emarginations and horn on each side; outer seven antennal segments forming stout club, segment 4 with only anterior portion expanded and part of club; terminal segment of maxillary palpus elongate-oval, rounded apically; mentum convex with only a few yellowish setae. Pronotum strongly transverse and convex, widest behind middle, all angles obtusely rounded, anterior margin strongly bisinuate with prominent median lobe; basal margin strongly bisinuate, entire border strongly beaded; surface finely and densely punctured, more coarsely so laterally, areas between punctures with extremely fine pattern of microreticulations. Elytra slightly narrower than pronotum, lateral margins straight and parallel, surface finely punctate-striate, punctures closely spaced; intervals flat, minutely and sparsely punctate. Ventral surface concolorous with dorsum; flanks of prothorax finely and densely punctured anteriorly, impunctate and smooth behind; prosternum sparsely punctured, prosternal process narrow between coxae, gradually deflexed behind and secondarily reflexed at apex; protibia broadly expanded from base to apex, outer margin coarsely toothed, densely clothed anteriomedially with dense pads of golden setae; all tarsi clothed beneath with long, sparse, golden setae; meso- and metasternum minutely and sparsely punctured; mesosternum strongly V-shaped anteriorly; metasternum with median incised line strong but short, extending less than half way from base toward anterior margin; abdominal sterna coarsely and densely punctured laterally, punctures much finer medially; epipleura abruptly abbreviated just caudad of last visible abdominal suture. Aedeagus as in Fig. 10. Length: 5.5 mm; width: 2.6 mm.

*Allotype,* female: Differs from the male in having small, blunt tubercles instead of horns at inner margins of eyes and complete absence of clypeal tubercles. The interocular area of the frons is more coarsely punctured than in the male but the clypeus is similarly abruptly delimited. Length: 5.5 mm; width: 2.7 mm.

*Variation:* Several males have the frontal horns considerably reduced and straight but the postocular depressions are equal to those of the holotype. The series of females is very uniform in coloration and punctation. Size: males: length 5.6–5.8 mm; width 2.6–2.7 mm; females, length 4.8–7.0 mm; width 2.2–2.9 mm.

*Types:* Holotype (male), allotype (female) and i 5 paratypes (6 males, 9 females), Costa Rica, Puntarenas Province, Osa Peninsula, 2.5 mi. SW Rincon, 08°42′N, 83°29′W, 1–7 March 1967, Robin Andrews; seven paratypes (5 males, 2 females), Costa Rica, Heredia Province, La Selva Res. Sta., VII-17, 1973, J. Doyen and P. A. Opler. One male paratype, Costa Rica, Rio Sn Lorencito, Res. For. Sn Ramon, 5 km N Col. Palmarino, Alajuela 900 m, March 1990; one male paratype, C.R., Estac. Pitilla, 9 km S Santa Cecilia, Guanacaste, February 1990, P. Rios, C. Moraga and R. Blanco [collectors] 700 m (Inst. de Biodiversidad, Sto. Domingo, C.R.). Other specimens studied but not designated paratypes include: 3 males, Panama, Barro Colorado Island, Canal Zone, VI-1942, J. Zetek; 1 male, same locality, 5 February 1968, J. F. Lawrence; 1 male, Hamburg Farm, Reventazon, Ebene Limon, 15 August 1925, F. Nevermann; 2 (male, female), Mexico, Oaxaca, 4.5 mi. S Valle Nacional, 16 August, 1973, A. Newton; 2 (male, female), Mexico, Hidalgo, Tenango Doria, 29 July, 1969, S. & J. Peck. Holotype, allotype and paratypes in MCZC; paratypes in USNM, CISC, and OSUC. Host data accompanying specimens include *Ganoderma nitidum* and *G. applanatum* in Costa Rica and *Ganoderma* sp. (Oaxaca) and *Phellinus* sp. (Hidalgo), Mexico.

*Remarks:* This species is most like *N. lecontei* Champion with frontal horns almost identical, but may be positively distinguished from it by the very different male genitalia (Fig. 10). In the male of *N. lawrencei*, there is no sharp bridge connecting the bases of the frontal horns and the postocular pits are deeper. Also, the punctures of the head and pronotum are extremely minute and quite inconspicuous in both sexes of *N. lecontei*. In males with drastically reduced frontal horns, the aedeagus should be examined to distinguish *N. lawrencei* from *N. lecontei*.

### *Neomida divergicornis*, New Species
Fig. 3

*Holotype*, male: Small, elongate-oval, strongly convex, reddish-brown, shining. Head with two long, widely separated, porrect, somewhat flattened, divergent frontal horns which are in contact laterally with eyes, and apices blunt and subtruncate; frons flat between horns, coarsely but sparsely punctured; clypeus well-defined, slightly raised posteriorly, almost impunctate, with two acute, prominent tubercles situated laterally; genal margin expanded and abruptly distinct from clypeus, slightly reflexed; eyes large, reniform, deeply emarginate anteriorly, posterior margin straight; antennae with basal four and apical segments pale, intermediate segments darker, outer eight segments transversely expanded to form a compact club; terminal segment of maxillary palpus elongate-oval, yellowish; mentum small, triangular. Pronotum strongly transverse, abruptly declivous laterally and slightly so anteriorly, widest about middle, all angles obtusely rounded, base bisinuate, anterior margin almost truncate, slightly produced medially; surface coarsely and densely punctured, most punctures separated by about their diameters. Elytra slightly wider than pronotum, lateral margin subparallel; coarsely punctate-striate, intervals distinctly convex, moderately coarsely and densely punctured; setae exceedingly minute and inconspicuous. Ventral surface concolorous with dorsum, coarsely punctured; legs yellowish; prosternal process deflexed between procoxae; protibiae not expanded; tarsi clothed beneath with long, fine, yellowish setae; epipleura abbreviated near last

visible abdominal suture. Aedeagus as in Fig. 11. Length: 4.4 mm; width: 2.0 mm.

*Female,* allotype: Similar to male but lacking clypeal tubercles and frontal horns. The frons is coarsely and rugosely punctured and the clypeus is more coarsely and densely punctured than in the male. Length: 3.8 mm; width: 1.7 mm.

*Variation:* The male paratype has both the frontal horns and clypeal tubercles reduced to less than half that of the holotype.

*Types:* Holotype, allotype and one male paratype: Mexico, Veracruz, 10 mi. W Panuco, 9-VI-1974, A. Raske (all in CASC).

*Remarks:* This species closely resembles *N. clavicornis* but both sexes are readily separable from the latter. The elytral sculpturing and punctation are almost identical as are the clypeal tubercles in the males. The greatest difference is in the deep median concavity on the frons immediately behind the frontal horns.

The female of *N. clavicornis* has the genal margins strongly expanded and reflexed as in the male, whereas *N. divergicornis* has the genal margin almost continuous with the clypeal margin and not at all reflexed. The rugosely punctured frons is diagnostic.

### *Neomida heterocera,* New Species
Fig. 4

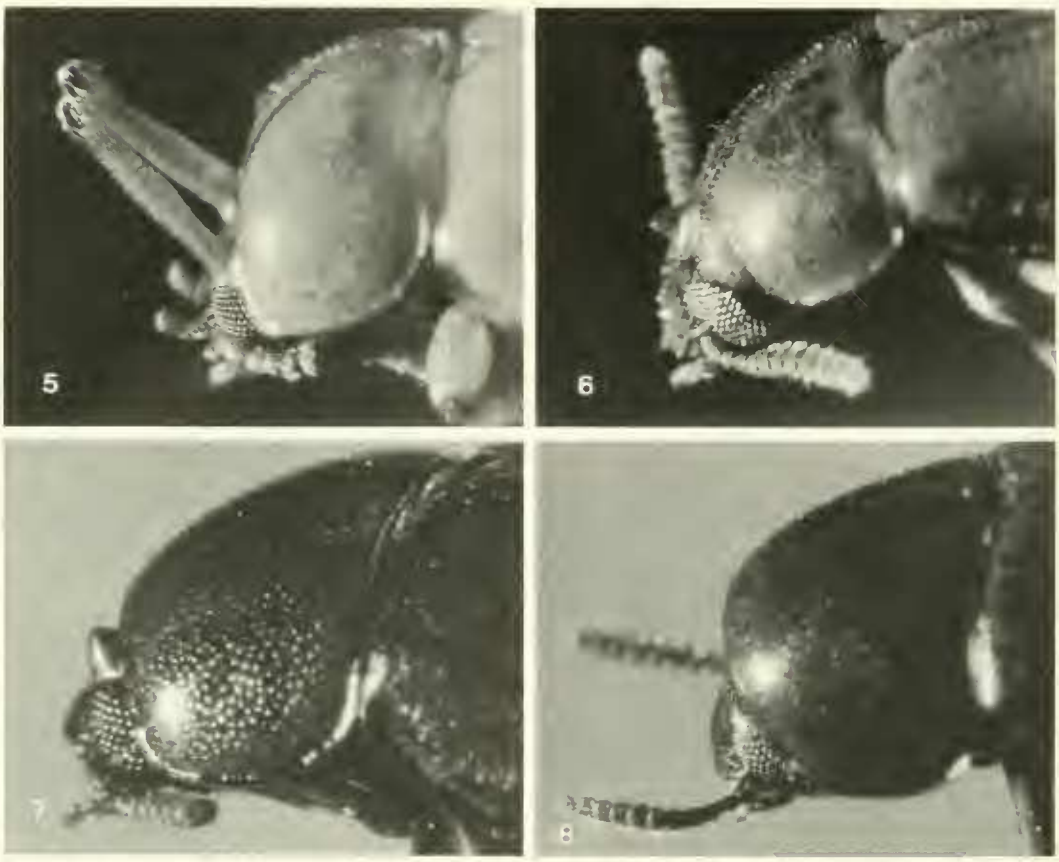
*Holotype,* male: Moderately large, elongate-oval, strongly convex, dark reddish-brown, shining. Head with frontal horns asymmetrical, the left shorter, thinner, and uniform in width, the right expanded and bluntly rounded apically, both horns bowed slightly inward; vertex flat, smooth, minutely and sparsely punctate, not differentiated from frons; clypeus well-defined, smooth, finely and sparsely punctate; clypeus and genae reflexed, two blunt clypeal tubercles connected by reflexed margin; eyes moderately large, not deeply emarginate anteriorly, dorsal lobe about ¼ size of ventral; antennae with distal seven segments transverse, forming a stout club, segment four with only anterior portion expanded and involved in club; black with basal two and terminal segments reddish; maxillary palpus elongate-oval, subtruncate apically; mentum convex, sparsely setose.

Pronotum strongly transverse and convex, strongly deflexed anteriorly, widest about middle, all angles obtusely rounded, anterior margin bisinuate with thick bead; basal margin feebly bisinuate, strongly beaded; surface smooth, uniformly finely and densely punctured.

Elytra subequal in width to pronotum, lateral margins straight and parallel, surface finely, somewhat obscurely punctate-striate, punctures not in grooves and not very closely spaced; intervals flat, rather coarsely punctured, minutely setose. Ventral surface concolorous with dorsum; flanks of pronotum smooth, impunctate; prosternum almost impunctate; prosternal process strongly deflexed posteriorly, its apex not prominent; tibiae all relatively slender; femora minutely strigose; tarsi sparsely clothed beneath with short yellowish setae; metasternum smooth medially with a few sparse punctures laterally, not strongly notched anteriorly, median incised line extending more than half way from base toward anterior margin; abdominal sterna coarsely but shallowly, not very densely punctured, finely setose. Epipleura abbreviated opposite middle of last visible abdominal segment. Aedeagus as in Figure 12. Length: 4.25 mm; width: 1.8 mm.

*Allotype,* female: Similar to male in size, coloration and punctation; differs in lacking frontal horns and any trace of clypeal tubercles; clypeus is deflexed anteriorly, not continuous with slightly reflexed genae; pronotum not deflexed anteriorly and with a much finer bead. Length: 3.75 mm; width: 1.7 mm.

*Variation:* In well developed males, the asymmetry of the frontal horns is readily apparent; even in poorly developed males, the right horn is always at least slightly larger than the left. Measurements: Males,




Figs. 5–8. *Neomida* spp., lateral aspect of head. 5, *N. pogonocera*, n. sp., ♂ (Panama: Barro Colorado Is.). Length: 3.4 mm. 6, *N. deltocera*, n. sp., ♂ (Panama: Barro Colorado Is.). Length: 2.8 mm. 7, *N. paurocera*, n. sp., ♂ (El Salvador: Quezaltepeque). Length: 3.5 mm. 8, *N. acera*, n. sp., ♂ (Panama: Barro Colorado Is.). Length: 4.6 mm.

length: 3.0–4.4 mm; Width: 1.5–1.9 mm. Females, length: 3.2–4.5 mm; width: 1.5–1.8 mm.

*Types:* Holotype, male and allotype, female, Costa Rica, Guanacaste, W slope Volcan Miravalles, 2800 ft., VI-29-1992, J. T. Doyen, ex *Inonotus* sp. (CISC); 35 male, 24 female paratypes, same data; 54 male, 45 female paratypes, same data except 3600–3800 feet. Paratypes in CISC and OSUC.

*Diagnosis:* This is the only species of *Neomida* I have seen with asymmetrical frontal horns. It most closely resembles *N. punctatissima* (Champion) but that species is larger and has both pronotum and elytra much more coarsely and densely punctured and, of course, the frontal horns are symmetrical.

### *Neomida pogonocera*, New Species
Fig. 5

*Holotype,* male: Small, elongate-oval, robust, strongly convex, light brownish-yellow, shining. Head with two long, slender cylindrical, porrect horns between and not quite in contact with inner margins of eyes; horns gradually tapering to apex and capped with long, slender, golden setae which are curved inward at their tips; vertex with concave depression between horns; clypeus slightly convex, distinctly set off from frons, with two long, stout recurved tubercles oc-

cupying most of anterior margin; entire surface of head impunctate but with fine pattern of microreticulations; eyes relatively small, deeply emarginate, with dorsal lobe much smaller than ventral lobe; antennae with distal 8 segments transverse, forming a loose club; mentum strongly convex, clothed with dense, short, pale setae medially. Pronotum transverse, convex, widest about middle, anterior angles almost right, basal angles obtusely rounded; both anterior and basal margins feebly bisinuate; entire border finely beaded; surface uniformly coarsely and densely punctured, most punctures separated by about their own diameters. Elytra slightly narrower than pronotum, lateral margins straight and parallel, surface confusedly punctured, punctures subequal to those of pronotum in size and spacing. Ventral surface concolorous with dorsum; flanks of prothorax rugosely but shallowly punctured, especially anteriorly; prosternum smooth and impunctate, prosternal process narrow between coxae, abruptly deflexed with apex not prominent; protibiae scarcely expanded from base to apex, outer margin very finely denticulate on distal half; all legs light yellowish; metasternum coarsely and densely punctured, median incised line deep caudally, extending cephalad about half way to mesosternum; abdominal sterna coarsely and densely punctured laterally, more finely so medially; epipleura abruptly abbreviated well past last visible abdominal suture. Aedeagus as in Fig. 13. Length: 3.4 mm; width: 1.6 mm.

*Female:* Differs from the male in lacking frontal horns and any trace of clypeal tubercles. The frons, vertex and clypeus are distinctly punctate. Length: 2.9–3.8 mm; width: 1.5–1.8 mm.

*Variation:* There is little variation in the type series. The second male is slightly smaller (3.1 × 1.5 mm).

*Types:* Holotype (male), allotype (female) and 4 paratypes (1 male, 3 females, Panama, Barro Colorado Island, Canal Zone, February 6, 1968, J. F. Lawrence, on *Ganoderma* sp. (Lawrence Lot No. 2340) Holotype, allotype and 2 paratypes in MCZC; male, female paratype in OSUC. Other specimens examined, but not designated paratypes: 5 males, 4 females, Brazil, Chapada, August (ICCM); 2 males, Buyana, Moroni, LeMoult (Termeszettudomanyi Museum, Budapest, Hungary). 1 male, Venezuela, Suapure, Caura River, February 1899, E. A. Klages (CUIC). 1 male, 1 female, Peru, Tambopata Prov., 15 km NE Pto. Maldonado, 18 July 1989, J. S. Ashe, R. Leschen (SEMC).

*Remarks:* This species is most like *N. inermis* (Champion) but is considerably larger, more robust and lighter in color. The long setae at the apex of the frontal horns are diagnostic. Both species have converging frontal horns and stout clypeal horns which in some males of *N. inermis* are somewhat recurved as in the present species.

### *Neomida deltocera*, New Species
Fig. 6

*Holotype,* male: Small, elongate-oval, moderately convex, reddish-brown, feebly shining. Head with two very short, porrect, conical frontal horns which are in contact laterally with eyes, each horn about as high as its base is long; frons between horns deeply, longitudinally excavate, surface smooth with a few poorly-defined shallow punctures; clypeus well-defined, smooth, finely punctate and with two small, nipple-like tubercles situated apically but not in contact with margin; genal margin rounded and smoothly continuous with clypeal margin, not greatly expanded or reflexed; eyes large, reniform, deeply emarginate anteriorly, posterior margin straight; antennae yellowish, outer eight segments transversely expanded to form a compact club which is relatively narrow for the genus; terminal segment of maxillary palpus elongate-oval; mentum longitudinally convex with a few short, yellowish setae. Pronotum strongly transverse, widest behind middle, all angles strongly rounded, base feebly bisinuate, an-

terior margin feebly emarginate; surface densely, finely and uniformly punctured. Elytra slightly wider than pronotum, lateral margins parallel, straight; surface finely, densely and confluently punctured, each puncture bearing a minute recumbent, yellowish seta; entire dorsal surface with pattern of micro-reticulations. Ventral surface reddish-brown, legs slightly paler; flanks of prothorax smooth; prosternal process rather broad, convex between coxae, margined laterally, the apex deflexed and obtuse; protibiae not expanded; tarsi clothed beneath with short, stiff setae; metasternum coarsely punctured, more densely so laterally and with a well-defined median longitudinal incised line; abdominal sterna finely and densely punctured, minutely pubescent; epipleura entire to apex. Aedeagus as in Fig. 14. Length: 3.0 mm; width: 1.4 mm.

*Allotype,* female: Similar to male but without cephalic armature. A shallow, longitudinal frontal impression and slightly swollen areas instead of frontal horns barely perceptible; entire frontal area including clypeus finely and densely punctured. Length: 3.0 mm.; width: 1.4 mm.

*Variation:* There is virtually no variation in the development of cephalic armature in the males of this species. Deep-seated pigment spots which give the illusion of striae are very large in the darker specimens and absent in the lighter ones. This same character appears in many of the brownish species of *Neomida* but is especially pronounced in this one. The lightest specimens appear to be teneral.

*Size:* Males: Length: 2.6–3.1 mm; width: 1.2–1.4 mm; females: Length: 2.6–3.2 mm; width: 1.3–1.4 mm.

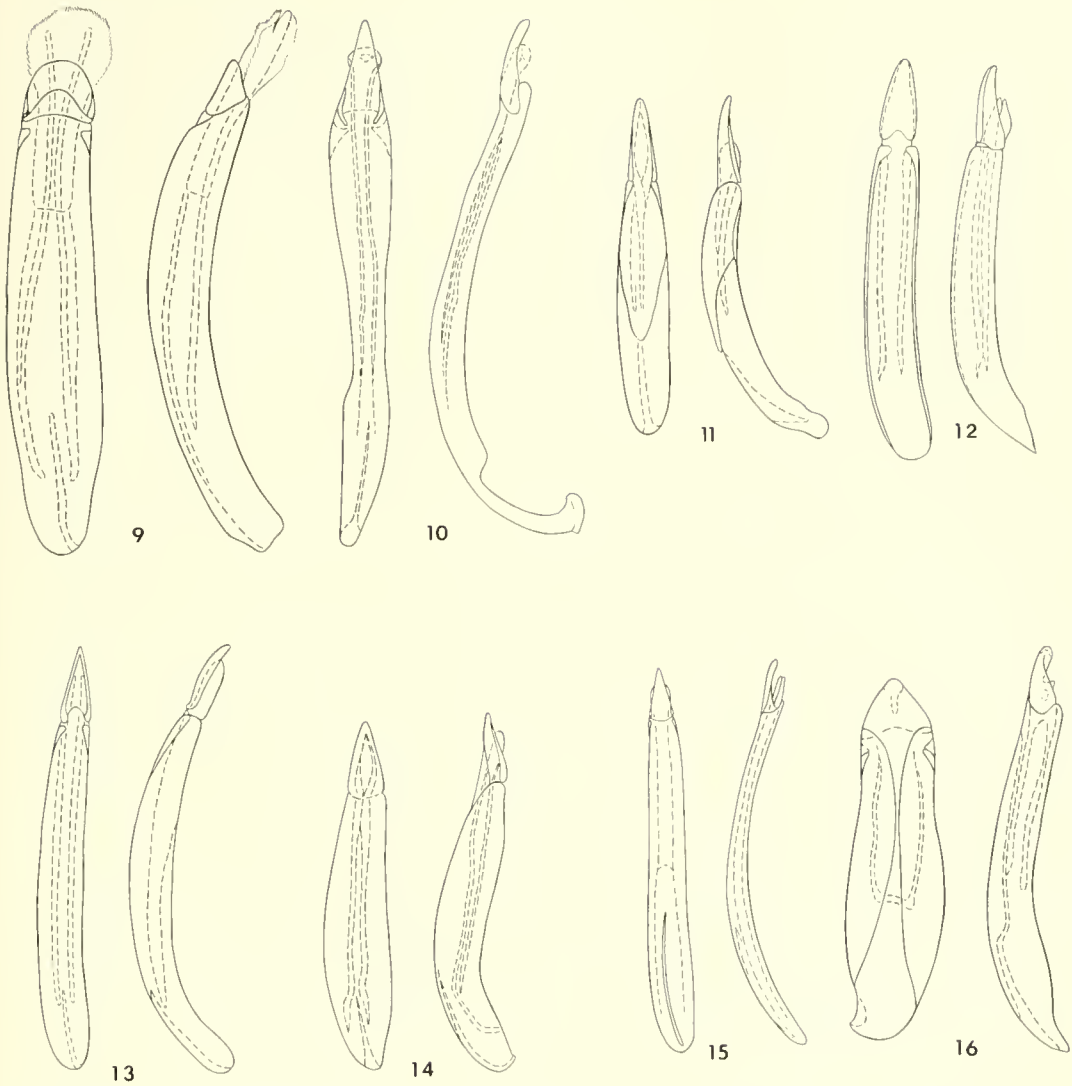
*Types:* Holotype, male, allotype, female, and paratypes (70 males, 63 females) all from Barro Colorado Island, Canal Zone, Panama, June, 1942, James Zetek. Additional paratypes: 3 males, Barro Colorado Island, Canal Zone, Panama, March 18, 1967, B. Patterson, on *Ganoderma applanatum*; 2 males, 1 female, same location, April 17, 1967, J. F. Lawrence, on *Ganoderma applanatum*; 2 males, same location, April 7, 1967, J. F. Lawrence, on *Fomes sclerodermeus*; 11 males, 8 females, Fort Sherman, Canal Zone, Panama, April 2, 1967, J. F. Lawrence, on *Ganoderma applanatum* and *G. zonatum*; 1 male, 1 female, Panama, Cerro Campana, August 9, 1969, J. F. Lawrence; 8 males, females, Panama, Alhajuelo, April, 1911, A. Busck. Holotype, allotype and paratypes in MCZC; paratypes in USNM, OSUC and BMNH.

Other specimens examined: 3 males, 1 female, 2.5 mi. SW of Rincon, Puntarenas, Costa Rica, March 1–7, 1967, Robin Andrews, on *Ganoderma nitidum*; 3 males, 1 female, Suriname, Brokopondo District, Brownsberg Natuurpark, Mazaroni Plateau, 400–500 m., 24 August, 1982, W. E. Steiner, Jr. (USNM); 3 males, 1 female, French Guiana, St. Laurent du Maroni (MNHN); 2 males, 1 female, Brazil, Maranhão, 50 km. E Candide, Para, 28-V-63, B. Malkin (FMNH); 25 males, females, Brazil, Santarem, acc. no. 2966 (ICCM); 3 males, 1 female, Guyana, Bartica, R. J. Crew (USNM); 4 males, 2 females, Dominica, W.I., Clarke Hall, VIII-13-1964, T. J. Spilman (USNM).

*Remarks:* This species closely fits Champion's description of *N. pentaphylloides* except that it does not have an excavation behind the frontal horns and it does have small tubercles on the clypeus of the male which Champion did not mention for *pentaphylloides*. Specimens submitted to C. M. F. von Hayek were compared with the type and she verified that *N. deltocera* and *N. pentaphylloides* were indeed different in regard to these characters. She also pointed out that *N. deltocera* "seems more shiny and the punctures on the pronotum more widely separated."

### *Neomida paurocera,* New Species
Fig. 7

*Holotype,* male: Small, elongate-oval, moderately robust, strongly convex, dark reddish-brown, glabrous, shining. Head with




Figs. 9–16. Aedeagi of *Neonida* spp., dorsal and lateral aspects. 9, *N. dolichocera*. 10, *N. lawrencei*. 11, *N. divergicornis*. 12, *N. heterocera*. 13, *N. pogonocera*. 14, *N. deltocera*. 15, *N. paurocera*. 16, *N. acera*.

frontal horns reduced to small tubercles near inner margins of eyes, frons and vertex moderately coarsely, closely punctured, clypeus well-defined, swollen, abruptly defexed anteriorly, without trace of tubercles, finely and densely punctured; eyes small, deeply emarginate anteriorly with dorsal lobe about ⅓ as large as ventral lobe. Pronotum transverse, convex, widest behind middle, anterior and basal angles both obtusely rounded, anterior margin subtruncate, basal margin bisinuate; surface finely and not very densely punctured, most punctures separated by several times their diameters. Elytra subequal in width to pronotum, lateral margins straight and parallel; surface finely punctate-striate; intervals flat, punctures fine, shallow, dense. Ventral surface concolorous with dorsum, flanks of prothorax longitudinally rugosely punctured; prosternum rugosely punctured, prosternal process abruptly deflexed be-

tween coxae with apex not prominent; protibiae gradually expanded from base to apex, outer margin with strong denticles apically, decreasing in size toward base, dense patch of golden setae on inner margins; metasternum coarsely punctured laterally; abdominal sterna very coarsely and densely punctured; epipleura abbreviated about opposite last visible abdominal suture. Aedeagus as in Fig. 15. Length: 3.7 mm; width: 1.7 mm.

*Female:* Almost identical to male except with even smaller frontal tubercles, subequal to male in size.

*Variation:* Because of the similarity in the sexes, I am only recording maximum and minimum measurements: Length: 3.5–4.6 mm; width: 1.6–2.2 mm.

*Types:* Holotype (male), allotype (female) and 72 paratypes (38 males, 34 females), Honduras, Copan ruins, 9 Oct., 1993, R. Turnbow. Eleven paratypes, El Salvador, 4 mi. W. Quezaltepeque, August 5, 1961; 2 paratypes, 2 mi. S. Quezaltepeque, July 19, 1961; 1 paratype, 3 mi. W. Quezaltepeque, August 1, 1961; 1 paratype, 10 mi. N. Quezaltepeque, July 3, 1961, all collected by M. E. Irwin. Holotype and allotype in USNM; paratypes in UCDC, OSUC, BMNH and R. H. Turnbow collection.

*Remarks:* Initially I thought the two series of specimens from Honduras and El Salvador were populations of small *N. obsoleta* (Champion). Examination of the male genitalia convinced me that they represented a new species. The complete lack of clypeal tubercles in either sex and the tiny frontal tubercles will separate the males from *N. obsoleta.*

### *Neomida acera,* New Species
Fig. 8

*Holotype,* male: Small, elongate-oval, slender, strongly convex, light reddish brown, glabrous, shining. Head lacking both frontal horns and clypeal tubercles, frons, vertex and clypeus very finely and sparsely punctulate; eyes small, deeply emarginate anteriorly, with dorsal lobe about ⅓ as large as ventral lobe. Pronotum transverse, convex, widest behind middle, all angles obtusely rounded, anterior margin rounded, basal margin bisinuate; surface uniformly finely and sparsely punctate, most punctures separated by several times their diameters. Elytra subequal in width to pronotum, lateral margins straight and parallel; surface coarsely punctate-striate, intervals subconvex, rather coarsely punctate. Ventral surface concolorous with dorsum, flanks of prothorax finely, longitudinally punctured (strigose), prosternal process abruptly deflexed between procoxae with apex not prominent; protibiae gradually expanded from base to apex, outer margin finely denticulate on apical half; metasternum practically impunctate medially with a few coarse punctures laterally; abdominal sterna coarsely and densely punctured; epipleura abbreviated about last visible abdominal suture. Aedeagus as in Fig. 16. Length: 4.8 mm; width: 2.1 mm.

*Female:* Indistinguishable externally from male.

*Variation:* Because of the similarity in the sexes, I am recording maximum and minimum measurements of both males and females: Length: 4.2–4.8 mm; width: 1.7–2.1 mm.

*Types:* Holotype (male, dissected), paratypes, same data (15); same locality but 9-II-1968, Panama, Canal Zone, Barro Colorado Island, VII-8-1969, 9-II-1968 (4). 31-VII-1969 (3), J. F. Lawrence; same locality II/19–III/9, 1975 (7), Lawrence and Erwin (7). Costa Rica, 2.5 mi. SW Rincon, Puntarenas, III-1-7, 1967, Robin Andrews (1); same locality and date, OTS Adv. Zoo. (no collector) (3). All except the last three were labelled as collected on *Fomes* (= *Nigrofomes*) *melanopterus.* Holotype and paratypes in MCZC; paratypes in OSUC.

*Remarks:* This species is most similar to *N. paurocera.* It may be readily separated

by the quite different shape of the aedeagus (compare Figs. 15 and 16). The male of *N. paurocera* has small but distinct frontal tubercles, the elytra are less strongly punctate (both striae and intervals), and the intervals are flat (not subconvex).

## Acknowledgments

For the loan of specimens upon which this paper is based, I am grateful to the following individuals and institutions (listed by acronyms): BMNH, The Natural History Museum, London, M. J. D. Brendell; CASC, California Academy of Sciences, San Francisco, David Kavanaugh; CISC, California Insect Survey, Berkeley, John T. Doyen; CUIC, Cornell University, Ithaca, NY, Q. D. Wheeler, Richard Hoebeke; FMNH, Field Museum of Natural History, Chicago, R. L. Wenzel; ICCM, Carnegie Museum, Section of Insects and Spiders, Pittsburgh, PA, John Rawlins; MCZC, Museum of Comparative Zoology, Harvard University, Cambridge, MA, A. L. Newton; OSUC, The Ohio State University Insect Collection, Columbus; SEMC, Snow Entomological Museum, University of Kansas, Lawrence, J. S. Ashe; UCDC, University of California, Davis, R. O. Schuster; USNM, National Museum of Natural History, Washington, D.C., T.J. Spilman. The photographs were taken by Robert Hancock and the genitalia drawings were made by Traci Temple. Peter W. Kovarik contributed greatly in several ways, especially preparing the specimens for illustration. I also thank T. J. Spilman and W. E. Steiner (USNM) for reviewing the manuscript and making useful suggestions.

## Literature Cited

Triplehorn, C. A. 1965. Revision of Diaperini of America north of Mexico with notes on extralimital species (Coleoptera: Tenebrionidae). Proceedings of the United States National Museum. No. 3515. 117: 349–458.